

REMARKS

Entry of this Amendment as a submission with a Request for Continued Examination (RCE) in accordance with the provisions of 37 CFR 1.114 is respectfully requested.

This Amendment is in response to the Final Office Action dated June 2, 2004. By the present Amendment, the independent claims have been amended to clarify the invention, and new claims 12-23 have been added to define further features of the present invention.

As discussed in the previous Amendment, the present invention is directed to a feature of using an electrically conductive plate, such as indicated by the numeral 4 in Fig. 1 (noting that reference to Fig. 1 is solely for purposes of example), provided between a chip 2 and a lead electrode 1. As discussed at length in the previously submitted Amendment of March 5, 2004, the location of the electrically conductive plate 4 between the chip 2 and the lead electrode 1 serves to both improve heat radiation and reduce the likelihood of stress, particularly when combined with other features defined in the present claims concerning the relative relationships between the coefficients of linear expansion and the widths of the various claimed elements.

Reconsideration and removal of the 35 U.S.C. § 102(b) rejection of claims 1-3 and 9-11 and the 35 U.S.C. § 103(a) rejection of claim 5 over U.S. Patent 4,305,088 to Narita is respectfully requested.

In the Office Action, the header section 2a of the Narita reference (e.g., see Figs. 3 and 4 of that reference) is relied on as meeting the claimed limitations for an electrically conductive plate located between the semiconductor chip and the lead electrode. However, as is clear from column 4, line 3 et seq. of the Narita reference,

the header section 2a is actually part of the header lead 2 rather than being a separate component located between the chip 7 and the header lead 2. Thus, the Narita reference actually does not have any equivalent structure for the claimed electrically conductive plate, but, instead, is simply a two piece header lead 2, having portions 2a and 2b, that is soldered to the chip without any intervening electrically conductive plate.

In order to clarify this distinction, each of the independent claims has now been amended to specifically define the lead electrode of the present invention as follows:

“wherein said lead electrode has a first portion and a second portion, said first portion being formed between said second portion and the electrically conductive plate, wherein said first portion is wider than said second portion, and wherein said first portion is joined to said electrically conductive plate through one of said soldering connection members.”

Solely for purposes of example, it is noted that the claimed first and second portions for the lead electrode, with the first portion being wider than the second portion, can readily be seen in Fig. 1. In particular, the lead electrode 1 effectively has a T-configuration with a first wider portion embedded within the solder connecting material 3a substantially parallel to the electrically conductive plate 4 and a second portion extending upward from the first portion in a direction substantially perpendicular to the electrically conductive plate.

By virtue of the present amendment clearly defining that the lead electrode has first and second portions, with the first portion being wider than the second portion, a reading of Narita on the present claimed invention would logically require reading the header portion 2a of the header lead 2 on the claimed first portion for the

lead electrode. This being the case, there is now no equivalent structure in Narita for the claimed electrically conductive plate.! Alternatively, if one continues to read the header portion 2a of Narita as the claimed electrically conductive plate then there is no equivalent structure in Narita for the claimed wider first portion of the lead electrode. Therefore, it is respectfully submitted that the amended independent claims clearly define over the Narita reference, and reconsideration and allowance of these amended independent claims, and their respective dependent claims, is respectfully requested.

It is noted that new dependent claims 12-23 serve to further define the features of the lead electrode (e.g., identified by the numeral 1 throughout the drawings), particularly with regard to other claimed elements. For example, claim 12 and similar dependent claims specifically define the feature shown in the present application drawings of embedding the first portion (i.e., the wider portion) of the lead electrode in the solder material 3a interposed between the electrically conductive plate 4 and the lead electrode 1. Applicants have discovered that this embedding serves to improve the heat radiation properties. New dependent claims such as claim 13 specifically define the T configuration of the lead electrode, again emphasizing the shortcoming of the primary reference to Narita in lacking an element which can be read on the claimed electrically conductive plate. Accordingly, reconsideration and allowance of these newly submitted dependent claims 9-12 is also respectfully requested.

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of either by telephone discussion or by personal interview, the

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Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Antonelli, Terry, Stout & Kraus, LLP Deposit Account No. 01-2135 (Docket No. 500.41144X00), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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